YW Ref:- H-3-263-560



KEY

- PCC Manhole — PPIC — Adoptable Surface water
- PCC Manhole — PPIC — Adoptable Foul water
- PCC Manhole — PPIC — Private Surface water
- PCC Manhole — PPIC — Private Foul water
- Channel Drain
- Service Margin
- Easement
- Site Boundary

All adoptable manholes are to have a minimum of 400mm clearance and a 300mm clearance between invert levels at cross over.

Yorkshire Water Notes

1. All adoptable sewers to be BSI Kitemark (certified to WIS 4-35-01).
2. Adoptable sewer pipes to be laid in maximum 3 metre lengths unless there is a specific operational need to lay longer lengths.
3. Plastic channel sections in manholes are not acceptable and Yorkshire Water would prefer clayware channel in manholes. We have found that plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the benching.
4. All adoptable sewer works and material to be in accordance with "Sewers for Adoption" 6th Edition, The Relevant British/European and Yorkshire Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and Kitemarked.
5. Manhole covers shall/must have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.
6. Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
7. Yorkshire Water is not obliged to accept new filter drain/land drainage run-off into the public sewer network or adoptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section with regard to the disposal of the filter drain/land drainage run-off.
8. Cover slabs must carry the BSI Kitemark or will be rejected by Yorkshire Water Inspector. Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
9. The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
10. "Sewers must have 5 metres clearance from trees and hedges (please also refer to Figure 2.3 on page 33 in "Sewers for Adoption" 6th Edition for restrictions on tree planting adjacent to sewers)".
11. Sewers to be laid in Class "S" Bedding (150mm granular bed and surround). Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 900mm in none vehicular access then a concrete slab should be provide above granular bed and surround.
12. Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).
13. The chamber size of manholes with more than one connection in them may need to be increased an increment to accommodate the connections and bends.
14. Yorkshire Water policy is not to accept Type "C" brick manholes and 1050mm dia manhole rings. Instead it is preferred that you use a type "B" manhole with 1200mm dia or 1500mm dia rings, with the opening sited over the channel where depth of cover to pipe soffit is 1 - 1.5m.
15. Design done in accordance with SFA 6
16. Plastic channel sections in manholes are not acceptable and Yorkshire Water would prefer clayware channel in manholes. We have found that plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the benching.
17. Cover slabs must carry the BSI Kitemark or will be rejected by Yorkshire Water Inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm for the Yorkshire Water specified cover size. Please refer to Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued Autumn 2004 for Kitemarked cover slab opening sizes.
18. Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.

All adoptable sewer works and material to be in accordance with "Sewers for Adoption" 6th Edition, The Relevant British/European and Yorkshire Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and Kitemarked.

Manhole covers shall/must have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.

Where a B125 cover and frame has been approved, this must not be coated in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Screw down covers are not acceptable.

Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.

Yorkshire Water is not obliged to accept filter drain/land drainage run-off into the public sewer network or adoptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section with regard to the disposal of the filter drain/land drainage run-off.

Cover slabs must carry the BSI Kitemark or will be rejected by Yorkshire Water Inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm for the Yorkshire Water specified cover size. Please refer to Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued Autumn 2004 for Kitemarked cover slab opening sizes.

Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.

The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.

"Sewers must have 5 metres clearance from trees and hedges (please also refer to Figure 2.3 on page 33 in "Sewers for Adoption" 6th Edition for restrictions on tree planting adjacent to sewers)".

Sewers to be laid in Class "S" Bedding (150mm granular bed and surround). Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 900mm in none vehicular access then a concrete slab should be provide above granular bed and surround.

Bedding and backfill material to conform to the requirement of Water industry Specification 4-08-02 (Table A2).

The chamber size of manholes with more than one connection in them may need to be increased an increment to accommodate the connections and bends.

Yorkshire Water policy is not to accept Type "C" brick manholes and 1050mm dia manhole rings. Instead it is preferred that you use a type "B" manhole with 1200mm dia or 1500mm dia rings, with the opening sited over the channel where depth of cover to pipe soffit is 1 - 1.5m.

DESIGN REVIEW

Design review by:		Checked by:	

Residual hazards:

1. For general notes refer to drawing 002.

DRAWING NOTES

Drainage

1. This drawing should be read in conjunction with Adept specification for drainage works and any other subsequent additions to this list.
2. All building drainage works shall be carried out in accordance with the current British/European standards BSEN752, the current building regulations and the local authority building control or NHBC specifications and requirements.
3. For external finished ground levels refer to architects external works drawing.
4. All private foul drainage to be 100ø laid at a minimum gradient of 1 in 40, all private surface water drainage to be 100ø laid at a minimum gradient of 1 in 60 unless otherwise noted. Pipework to be laid to inverts shown on schedule.
5. All Junctions are to be done using a 'Y' junction to direct the flow in line with the main pipe.
6. All cover levels to manholes are approximate only and may be adjusted on site to tie in with Architects proposed levels.
7. Exact location of rainwater downpipes and all internal drainage points to be confirmed by Architect. Rainwater pipe outlets to be rodable.
8. For all setting out, dimensions and current site layout refer to Architects drawing. Do not scale from this drawing
9. Invert levels of all outfall points to be clarified prior to commencing drainage works. Position size and depth of all existing drains and services shall be established prior to commencement on site and any discrepancies reported to engineer.
10. The contractor shall allow for the protection, temporary and permanent support, and temporary and permanent diversion works, as necessary to all existing services
11. The contractor shall allow for all traffic management in connection with road and sewer works
12. The contractor shall allow for keeping trenches and excavations as dry as practicable by pumping from temporary sumps and dewatering as appropriate. The point and method of discharge to be agreed with the drainage authority and Environment Agency
13. Contractor to apply for sewer permits and road opening permits as necessary from the appropriate authorities, prior to commencing works.
14. At changes in pipe diameter Soffits to coincide unless noted otherwise
15. Wherever possible, drainage works are:
    - To commence at outfall
    - To work Upstream
16. All Adoptable pipe work < 300 to be Clay, > 300 to be Concrete. With the strengths shown bellow:

    Clay Pipe Min Strengths
    100mm dia 40KN/m
    150mm dia 40KN/m
    225mm dia 45KN/m
    300mm dia 72KN/m

    Concrete Pipe Min Strengths all diameters to be class 120 (54KN/m)
17. Tree's should not be planted within 5m of adoptable sewers, where this is not possible due to planning conditions a suitable root barrier needs to be installed around any tree types that are within the prescribed restrictions as set out in Sewers for Adoption 6th Edition Figure 2.3. Where the Mature tree canopy will overhang the adoptable highway a suitable root barrier will be required to prevent damage to statutory undertakers equipment and the integrity of the highway construction.

Date	Revision	By	Chkd	Rev
26.01.18	Updated to suit Yorkshire Water comments	LW	CB	P6
16.01.18	Updated to suit Yorkshire Water comments	LW	CB	P5
29.09.17	Pipe Material and flow direction added	JR	CB	P4
10.06.16	S27 and F36 moved closer to boundary	JR	CB	P3
18.05.16	Drainage updated to suit new site layout	JR	CB	P2
18.02.16	Initial Issue	CB	RP	P1

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Project
Hill End Road, Mapplewell

Title
Proposed Drainage Layout

Client
Esh

Scale @ A1	Drawn	Checked
1:200	CB	RP
Date: Feb 2016	Status: Preliminary	
Drg. No. 00.15021/101	Rev. P6	

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